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PATENT APPLICATION

ATTORNEY DOCKET NO. 10011570-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): William D. Holland

Confirmation No.: 5976

Application No.: 10/700,956

Examiner: Rory B. Finneren

Filing Date: October 31, 2003

Group Art Unit: 2828

Title: Laser Scanning Apparatuses, Laser Scanning Methods, and Article of Manufacture

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEFTransmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 10/10/07.☒ The fee for filing this Appeal Brief is \$510.00 (37 CFR 41.20).☐ No Additional Fee Required.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:☐ 1st Month
\$120☐ 2nd Month
\$460☐ 3rd Month
\$1050☐ 4th Month
\$1640☐ The extension fee has already been filed in this application.☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of \$ 510. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

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Application Serial No. 10/700,956
Filing Date October 31, 2003
Inventor William D. Holland
Assignee Hewlett-Packard Development Company, L.P.
Group Art Unit 2828
Examiner Rory B. Finneren
Attorney's Docket No. PDNO. 10011570-1
Confirmation No. 5976
Title: Laser Scanning Apparatuses, Laser Scanning Methods, and Article of
Manufacture

BRIEF OF APPELLANT

To: Mail Stop Appeal Brief-Patents
Commissioner of Patents
P.O. Box 1450
Alexandria VA 22313-1450

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Appellant appeals from the Office Action mailed July 10, 2007 (hereinafter "Office Action" or "Action"). The Commissioner is authorized to charge the fee required under 37 C.F.R. § 41.20(b)(2) to Deposit Account No. 08-2025.

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I. REAL PARTY IN INTEREST

The real party in interest of this application is Hewlett-Packard Development Company, L.P. as evidenced by the full assignment of the pending application to Hewlett-Packard Development Company, L.P. recorded starting at Reel 014631, Frame 0776, in the Assignment Branch of the Patent and Trademark Office. The Hewlett-Packard Development Company, L.P., is a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249 Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

II. RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's undersigned legal representative, and the assignee of the pending application are aware of no appeals or interferences which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF THE CLAIMS

Claims 1-12, 14-38, and 40-47 are pending. Claims 13 and 39 are canceled. Claims 1-12, 14-38, and 40-47 stand rejected. Appellant appeals the rejections of claims 1-12, 14-38, and 40-47.

IV. STATUS OF AMENDMENTS

No amendments have been filed after the Office Action mailed July 10, 2007.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Concise explanations of the subject matter defined in each of the independent claims and argued dependent claims involved in the appeal follow with respect to exemplary illustrative embodiments of the specification and figures.

Referring to independent claim 1, a light source is described at page 4, line 22 according to one embodiment of the specification. A scanning device is

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described at page 4, line 26 according to one embodiment. A start-of-scan detector assembly is described at page 5, line 8 according to one embodiment.

Referring to dependent claim 4, maintaining a drive level of the light source at a predetermined drive level is described at the last line of page 9 according to one embodiment.

Referring to independent claim 9, a rotating scanning device is described at page 4, line 26 according to one embodiment. A photodetector is described at page 5, line 10 according to one embodiment. A control system is described in one embodiment at page 7, line 5 of the specification. Maintaining a drive level of the light source at a constant drive level is described at the last line of page 9 according to one embodiment.

Referring to independent claim 14, a laser is described at page 4, line 22 according to one embodiment of the specification. A scanning device is described at page 4, line 26 according to one embodiment. A photodetector is described at page 5, line 10 according to one embodiment. A control system is described in one embodiment at page 7, line 5 of the specification. Maintaining a constant drive level is described at the last line of page 9 according to one embodiment.

Referring to independent claim 18, a means for generating a light beam is described at page 4, line 22 according to one embodiment of the specification. A means for scanning is described at page 4, line 26 according to one embodiment. A means for sampling is described at page 5, line 10 according to one embodiment. A means for receiving and maintaining is described in one embodiment at page 7, line 5 of the specification and the last line of page 9 according to one embodiment.

Referring to independent claim 22, generating a light beam is described at page 4, line 22 according to one embodiment of the specification. A rotating scanning device for scanning a light beam is described at page 4, line 26 according to one embodiment. A photoconductor is described at page 5, line 10 according to one embodiment. Control of a light source is described in one embodiment at page 7, line 5 of the specification and the last line of page 9 according to one embodiment.

Referring to claim 25, maintaining an output power of a light source at a constant level is described at the last line of page 9 according to one embodiment.

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Referring to independent claim 29, a photoconductor is described at page 5, line 10 according to one embodiment. A laser scanning apparatus is described at page 4, line 14 according to one embodiment. A laser is described at page 4, line 22 according to one embodiment of the specification. A scanning device is described at page 4, line 26 according to one embodiment. A sampling assembly is described at page 5, line 24 according to one embodiment. A control system is described in one embodiment at page 7, line 5 of the specification. An image engine is described at page 4, line 9 according to one embodiment.

Referring to independent claim 31, processor-usable media is described at page 8, line 30 according to one embodiment. A control signal is outputted at page 7, line 5 of the specification. Accessing of output of the start-of-scan detector assembly is described at page 7, line 8 according to one embodiment. Processing of the output is described at page 7, line 10 according to one embodiment. The control signals are adjusted to adjust intensity as described at page 7, line 14 according to one embodiment.

Referring to claim 32, controlling the light beam to have a substantially constant intensity is described at page 7, line 17 according to one embodiment.

Referring to claim 43, controlling the light source to generate the light beam having a substantially constant intensity is described at page 7, line 17 according to one embodiment.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

- A. The 102 rejection of claims 1-8 and 33-37 over Novak.
- B. The 102 rejection of claims 9-12, 38 and 45 over Novak.
- C. The 102 rejection of claims 9 and 12 over Shimada.
- D. The 102 rejection of claims 14-17 and 46 over Novak.
- E. The 102 rejection of claim 18-21 and 47 over Novak.
- F. The 102 rejection of claims 22-28 and 40-43 over Novak.
- G. The 102 rejection of claims 22 and 24 over Shimada.

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- H. The 102 rejection of claims 29-30 and 44 over Novak.
- I. The 102 rejection of claims 31-32 over Novak.
- J. The 102 rejection of claim 4 over Novak.
- K. The 102 rejection of claim 25 over Novak.
- L. The 102 rejection of claim 32 over Novak.
- M. The 102 rejection of claim 43 over Novak.
- N. The 112, second paragraph rejection of claims 1, 6, 14, 17-18, 20, 22, 29, 32-36, 38, 41 and 43.

VII. ARGUMENT

A. Positively-recited limitations of claims 1-8 and 33-37 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

Independent claim 1 recites a laser scanning apparatus comprising a scanning device optically coupled with the light source and configured to *scan the light beam along a photoconductor in a plurality of scan lines* and a start-of-scan detector assembly configured to *sample the single light beam* and initiate a start-of-scan operation of one of the scan lines of information to be written on the photoconductor, and *wherein only the sampled single light beam is used to control a drive level of the light source.*

At page 4 of the Action, the Office relies upon the teachings of Fig. 3 of Novak including a video data network 103 for modulating a laser 106 as allegedly teaching the claimed limitations that only the sampled single light beam is used to control a drive level of the light source. Appellants note that the Office has failed to identify any specific teachings that the video data network controls a drive level of the light source. Appellants have failed to uncover any teachings in Novak of the above-recited limitations. To the contrary of teaching the above-recited claim limitations including use of only the sampled single light beam to control the drive level of the light source, Novak at col. 6, lines 40+ states that the video data network 103 applies *video data* to laser diode 106 and the laser diode 106

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produces a laser beam that is *modulated to include the data*. Appellants respectfully submit that the operations of the modulating the laser beam to include the video data may not be fairly interpreted to teach control of a *drive level of the light source* as defined in claim 1. Appellants have failed to uncover any teachings in Novak of control of a drive level of the light beam as used in Appellants' specification.

More specifically, Appellants refer to paragraphs 0002-0003 of the specification of the present application which discusses differences of modulation of the light source according to data to be written onto the photoconductor versus control of the drive level, power or intensity of the light source. More specifically, per paragraph 0002, light output of the laser is modulated to selectively discharge a photoconductor to represent different states of digital information. However, some arrangements or applications have a need to modulate the output of the light source to controlled power levels. Paragraph 0003 discusses a conventional arrangement wherein a second light beam emitted from the light source may be sampled and used as feedback to control the drive level of the light source so that the modulated output of the first light beam including the data are outputted at controlled power levels.

Appellants further refer to paragraphs 0028-0038 which describe example embodiments of controlling the drive level, power or intensity of the light source. This control of the drive level of the light source is different from the modulation of the light source according to data to form latent images upon the photoconductor which is further described for example at paragraph 0047 which provides data for the scan line is applied to the light source to write a respective scan line of information onto the photoconductor and paragraph 0002 discussed above which provides light output of the laser may be modulated to selectively discharge the photoconductive drum.

Appellants respectfully submit that the modulation of the laser diode 106 by the video data network 103 according to the video data to write the video data onto the photoreceptor 10 may not be fairly interpreted to teach the claimed limitations of *only the sampled single light beam is used to control a drive level of the light source*.

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Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

B. Positively-recited limitations of claims 9-12, 38 and 45 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

The Office at page 4 of the Office Action relies upon reference teachings of Novak which allegedly taught limitations of claim 1 in support of the 102 rejections of independent claims 9, 14, 18, 22, 29 and 31 over Novak. However, Appellants note that claims 9, 14, 18, 22, 29 and 31 recite limitations different than the limitations of claim 1. As discussed below, the Office has failed to identify teachings of the prior art which allegedly disclose limitations of the pending claims and Appellants have failed to uncover any teachings of the claimed limitations in the prior art. Appellants respectfully submit positively-recited limitations of claims 9-12, 38 and 45 are not disclosed by the prior art and Appellants respectfully request reversal of the 102 rejection for at least this reason.

Independent claim 9 recites a *rotating scanning device configured to scan a light beam from a light source*, a photodetector configured to *sample the light beam from the rotating scanning device*, and a *control system configured to control a drive level of the light source responsive to an indication of the sampled light*. The modulation of the light source to write data onto the photoreceptor of Novak may not be fairly interpreted to teach or suggest limitations of controlling a drive level of the light source. Appellants have failed to uncover any teachings in Novak that the laser beam 26 which is scanned onto the photoconductor is sampled and such used to control a drive level of the laser diode 106. Appellants respectfully submit that the above-recited limitations are not disclosed nor suggested by Novak and the rejection is improper for at least this reason.

Furthermore, independent claim 9 defines the control system is configured to *maintain the light source at a constant drive level during scanning of a single line of information on the photoconductor*. Appellants have electronically searched Novak and have failed to uncover any teachings regarding control of a drive level of the light source let alone maintaining the light source at a constant drive level during scanning of a single line of information as explicitly recited in the claims.

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Furthermore, the Office has failed to identify any teachings in the prior art of these limitations.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by Novak and the claims are allowable for at least this reason.

C. Positively-recited limitations of claims 9 and 12 are not disclosed by Shimada and the 102 rejection is improper for at least this reason.

The Office relies upon teachings of Figs. 6 and 12 of Shimada in support of the rejection. Appellants respectfully submit that Shimada fails to teach or suggest positively-recited limitations of the claims and the 102 rejection is improper for at least this reason.

In particular, Shimada explicitly discloses two light beams, one which is scanned on the photoconductor and used for synchronization while the other is used to control the intensity of the laser diode 210 which fails to teach the above-recited limitations. Fig. 6 of Shimada teaches a laser diode unit 101. The laser diode unit 101 emits a forward laser beam which is directed to optical fiber 112 and is used for sync operations for maintaining the scanning start position at a constant as recited at col. 6, lines 26+ and col. 7, lines 1+ of Shimada.

These synchronization operations are also depicted in Fig. 8a where the sync detecting circuit 165 performs the sync operations using the first light beam sampled by photodiode 165A per col. 10, lines 5+ of Shimada. However, Fig. 8a also shows a second photodiode 211 receiving a second light beam and also being coupled with monitor circuit 204 for controlling the intensity of light emitted by the laser diode 210 of unit 101 per col. 9, lines 60+. Referring to col. 10, lines 8+ of Shimada, *the sync operations are based upon a first light beam which is received by photodiode 165A after scanning using the laser writing system 24 while the intensity is controlled based upon a second different light beam which is emitted rearwardly of the laser diode 210 and received by the second photodiode 211.* Accordingly, Shimada clearly and explicitly teaches the use of two light beams: a first which is scanned upon the photoconductor and used for sync operations; and a second which is not scanned and is used to control the intensity of the laser diode 210.

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Referring to independent claim 9, the plural beam system of Shimada fails to teach or suggest the limitations of a rotating scanning device configured to scan a light beam from a light source, a photodetector optically coupled with the rotating scanning device and configured to sample the light beam from the rotating scanning device, and a control system configured to receive an indication of the sampled light beam from the photodetector and to control a drive level of the light source responsive to the indication of the sampled light. In particular, claim 9 recites that the same light beam which is scanned is also sampled by the photodetector and used to control the drive level of the light source. The plural light beam arrangement of Shimada including a first light beam which is scanned and a second light beam which is used to control the intensity of the laser diode fails to teach or suggest the above-recited limitations.

Furthermore, Appellants have failed to uncover any teachings of the claimed limitations that the control system is configured to maintain the light source at a constant drive level during scanning of a single line of information on the photoconductor.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by Shimada and the claims are allowable for at least this reason.

D. Positively-recited limitations of claims 14-17 and 46 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

The Office at page 4 of the Office Action relies upon reference teachings of Novak which allegedly taught limitations of claim 1 in support of the 102 rejection of independent claim 14 over Novak. However, Appellants note that claim 14 recites limitations different than the limitations of claim 1. As discussed below, the Office has failed to identify teachings of the prior art which allegedly disclose limitations of the pending claims and Appellants have failed to uncover any teachings of the claimed limitations in the prior art. Appellants respectfully submit positively-recited limitations of the claims are not disclosed by the prior art and Appellants respectfully request reversal of the 102 rejection for at least this reason.

In particular, independent claim 14 recites a laser configured to generate a single light beam, a scanning device configured to scan the light beam from the

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laser, a photodetector optically coupled with the scanning device and configured to sample the light beam only once per line of information scanned onto a photoconductor, and a control system configured to maintain a drive level of the laser at a constant drive level during scanning of the line of information onto the photoconductor using the indication of the sampled single light beam. The Office has failed to identify teachings in Novak which disclose limitations of claim 14. Appellants have failed to locate any teachings in Novak that the diode 106 which emits the laser beam 26 which is scanned is maintained at a constant drive level during the scanning of a line of information using the laser beam 26 which is sampled.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

E. Positively-recited limitations of claims 18-21 and 47 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

Similar to the rejections discussed in Arguments sections B and D above, Appellants note that claim 18 recites limitations different than the limitations of claim 1 and the Office has failed to identify teachings of the prior art which disclose limitations of claim 18. As discussed below, Appellants have failed to uncover teachings of claimed limitations in the prior art. Appellants respectfully submit positively-recited limitations of the claims are not disclosed by the prior art and Appellants respectfully request reversal of the 102 rejection for at least this reason.

In particular, independent claim 18 recites a *means for generating a single light beam; means for scanning the light beam onto a photoconductor; means for sampling the single light beam which causes information to be scanned onto the photoconductor; and means for maintaining the means for generating at a constant drive level using the indication of the sampled single light beam and during scanning of the line of information onto the photoconductor.* The Office has failed to identify teachings in Novak which disclose limitations of claim 18. Appellants have failed to locate any teachings in Novak that the diode 106 which emits the laser beam 26 which is scanned is maintained at a constant drive level during the scanning of a line of information using the laser beam 26 which is sampled.

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Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

F. Positively-recited limitations of claims 22-28 and 40-43 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

Similar to the rejections discussed in Arguments sections B, D, and E above, Appellants note that claim 22 recites limitations different than the limitations of claim 1 and the Office has failed to identify teachings of the prior art which disclose limitations of claim 22. As discussed below, Appellants have failed to uncover teachings of claimed limitations in the prior art. Appellants respectfully submit positively-recited limitations of the claims are not disclosed by the prior art and Appellants respectfully request reversal of the 102 rejection for at least this reason. In particular, independent claim 22 recites *generating a single light beam using a light source, scanning the light beam along a photoconductor, sampling only the single light beam from the rotating scanning device using a sampling assembly, and controlling the light source only using the sampling of only the single light beam*. Appellants have failed to uncover the claimed control of the light source only using the sampling of only the single light beam in Novak.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by Novak and the claims are allowable for at least this reason.

G. Positively-recited limitations of claims 22 and 24 are not disclosed by Shimada and the 102 rejection is improper for at least this reason.

As discussed above, Shimada is directed towards a *plural light beam arrangement* which uses a *first light beam* which is scanned and received by a first photodiode 165A of Fig. 8a to control sync operations and a *second light beam* which is *not scanned* and is received by a second photodiode 211 of Fig. 8a to *control intensity of the laser diode 210*. The laser diode of 210 in Shimada emits a first forward light beam which is scanned and received by photodiode 165 and a second rearward light beam which is received by photodiode 211. This

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arrangement is similar to the prior art arrangement described in Fig. 1 of the application and fails to teach positively-recited limitations of claim 22.

In particular, Appellants respectfully submit that the plural beam arrangement of Shimada fails to teach or suggest the limitations of independent claim 22 reciting *generating a single light beam using a light source, scanning the light beam along the photoconductor using the rotating scanning device, sampling only the single light beam from the rotating scanning device using a sampling assembly, and controlling the light source only using the sampling of only the single light beam*. The beam used to control the intensity of the diode is not scanned and Appellants respectfully submit that Shimada fails to teach the method of claim 22.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by Shimada and the claims are allowable for at least this reason.

H. Positively-recited limitations of claims 29-30 and 44 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

Similar to the rejections discussed in Arguments sections B, D, E and F above, Appellants note that claim 29 recites limitations different than the limitations of claim 1 and the Office has failed to identify teachings of Novak which disclose limitations of claim 29. As discussed below, Appellants have failed to uncover teachings of claimed limitations in the prior art. Appellants respectfully submit positively-recited limitations of the claims are not disclosed by the prior art and Appellants respectfully request reversal of the 102 rejection for at least this reason.

Independent claim 29 recites a laser scanning apparatus configured to write scan lines of information onto the photoconductor and comprising a *laser configured to generate a single light beam*, a scanning device optically coupled with the laser and configured to *scan the light beam along the photoconductor to form scan lines*, a *sampling assembly configured to sample the light beam*, and a *control system configured to control an intensity of the light beam generated by the laser responsive to the signal indicative of the sampling of the single light beam*. The Office has failed to identify teachings in Novak which disclose limitations of claim 29 and Appellants have failed to locate any teachings in Novak that the intensity of

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the laser beam 26 which is scanned is controlled by a control system responsive to a signal indicative of the sampling of laser beam 26.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

I. Positively-recited limitations of claims 31-32 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

Similar to the rejections discussed in Arguments sections B, D, E, F and H above, Appellants note that claim 31 recites limitations different than the limitations of claim 1 and the Office has failed to identify teachings of Novak which disclose limitations of claim 31. As discussed below, Appellants have failed to uncover teachings of claimed limitations in the prior art. Appellants respectfully submit positively-recited limitations of the claims are not disclosed by the prior art and Appellants respectfully request reversal of the 102 rejection for at least this reason.

Independent claim 31 recites *outputting a control signal to control a light source configured to generate a single light beam used to scan a plurality of scan lines of information onto a photoconductor, accessing an output of a start-of-scan detector assembly which is indicative of only the single light beam*, wherein the output indicates *appropriate timing for initiation of writing of the information for the respective scan lines*, and *adjusting the control signal responsive to the processing of the output of the start-of-scan assembly to adjust an intensity of the light beam generated by the light source*. The Office has failed to identify teachings in Novak which disclose limitations of claim 31 and Appellants have failed to locate any teachings in Novak of a control signal which is used to control the diode 106 (which emits laser beam 26) is adjusted responsive to processing of the signal on line 151 *to adjust an intensity of the laser beam 26*.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

J. Positively-recited limitations of claim 4 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

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The claim recites (in combination with claim 2 from which it depends) that the control system is configured to control the drive level of the light source based on the signal from the detector assembly which is configured to sample the light beam which is scanned along the photoconductor and the control system is configured to maintain the drive level of the light source at a predetermined level during scanning of one scan line. At page 5 of the Action in support of the rejection of claim 4, the Office makes a cursory reference to the video data network 103 for modulating the laser and provides no explanation as to how such is considered to discuss the above-recited numerous limitations. In addition, Appellants have failed to uncover any teachings in Novak that the laser beam 26 of Novak which is scanned is sampled or otherwise used to control the drive level of the laser diode 106 let alone sampled or otherwise used to maintain the drive level of the light source at a predetermined level.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

K. Positively-recited limitations of claim 25 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

The claim recites maintaining an output power of the light source at a constant level during writing of a single scan line of information onto the photoconductor. The Office fails to identify any teachings in Novak of the above-recited limitations and Appellants have failed to uncover any teachings in Novak of the claimed limitations.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

L. Positively-recited limitations of claim 32 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

The claim recites adjusting the control signal to provide the light beam having a substantially constant intensity during the scanning of the scan lines. The Office

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fails to identify any teachings in Novak of the above-recited limitations and Appellants have failed to uncover any teachings in Novak of the claimed limitations.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

M. Positively-recited limitations of claim 43 are not disclosed by Novak and the 102 rejection is improper for at least this reason.

The claim recites *controlling the light source to generate the light beam having a substantially constant intensity*. The Office fails to identify any teachings in Novak of the above-recited limitations and Appellants have failed to uncover any teachings in Novak of the claimed limitations.

Appellants respectfully submit that positively-recited limitations are not disclosed nor suggested by the prior art and the claims are allowable for at least this reason.

N. Claims 1, 6, 14, 17-18, 20, 22, 29, 32-36, 38, 41 and 43 are definite and the 112, second paragraph rejection is in error.

35 U.S.C. §112, second paragraph, requires that the claims particularly point out and distinctly claim the subject matter that *the patent applicant regards as their invention*. "Distinctly" has been interpreted to mean simply that the claim must have a clear and definite meaning when construed in the light of the complete patent document. *Standard Oil Company v. American Cyanamid Company*, 774 F.2d 448, 227 USPQ 293 (Fed. Cir. 1985). In reviewing a claim for compliance with 35 U.S.C. §112, second paragraph, the Examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. §112, second paragraph by providing clear warning to others as to what constitutes infringement of the patent. MPEP §2173.02 (8th ed., rev. 6).

The 112 rejections are based upon "light beam" limitations recited in the claims. Each of the claims sets (a claim set including an independent claim and the respective dependent claims thereof) define and recite a light beam. The references to a light beam in any of the claims of a claim set refer to the same light beam for

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the respective claim set consistent with the example embodiments of the disclosure which are used to determine whether the claims are definite.

Appellants respectfully note the ability of the Office to exam the claims as written. Presumably, the claims were understood which permitted the examination to occur and which is compelling evidence that the claims are understood by one of ordinary skill in the art and are definite.

Referring to the 112 rejection of independent claim 1, Appellants respectfully submit that antecedent basis for "the light beam" in line 4 is provided at line 2 of the claim. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 1.

Referring to claim 6, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 1. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 6.

Referring to independent claim 14, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 14. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 14.

Referring to claim 17, Appellants respectfully submit that antecedent basis for "the sampled light beam" in line 1 is provided at lines 2 and 5 of claim 14. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 17.

Referring to the 112 rejection of independent claim 18, Appellants respectfully submit that antecedent basis for "the light beam" in line 3 is provided at line 2 of the claim. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 18.

Referring to claim 20, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 18. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 20.

Referring to the 112 rejection of independent claim 22, Appellants respectfully submit that antecedent basis for "the light beam" in line 4 is provided at line 2 of the claim. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 22.

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Referring to the 112 rejection of independent claim 29, Appellants respectfully submit that antecedent basis for "the light beam" in lines 7, 8 and 10 is provided at line 5 of the claim. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 29.

Referring to claim 32, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 5 of claim 31. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 32.

Referring to claim 33, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 1. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 33.

Referring to claim 34, such claim further clarifies claim 33 which recites a laser configured to generate the light beam and further clarifies claim 1 which defines a detector assembly configured to sample the single light beam. It is inherent that the light beam of the claim includes photons and Appellants respectfully submit that one of skill in the art would understand the limitations of claim 34 that the laser of claim 33 which generates the light beam which is sampled by the detector assembly generates all of the photons which are sampled by the detector assembly. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 34.

Referring to claim 35, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 33. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 35.

Referring to claim 36, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 33. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 36.

Referring to claim 38, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 9. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 38.

Referring to claim 41, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 22. Appellants respectfully

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submit that one of ordinary skill in the art would understand the language of claim 41.

Referring to claim 43, Appellants respectfully submit that antecedent basis for "the light beam" is provided at line 2 of claim 22. Appellants respectfully submit that one of ordinary skill in the art would understand the language of claim 43.

Appellants respectfully submit withdrawal of the 112 rejection for the above-mentioned reasons.

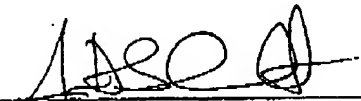
In the event that any claim is found by the Board to be indefinite but allowable over the prior art, Appellants would welcome the opportunity to work with the Examiner to amend the claim to recite language agreed to by the Examiner as being definite.

O. Conclusion

In view of the foregoing, reversal of the rejections of the claims is respectfully requested. For any one of the above-stated reasons, the rejections of the respective claims should be reversed. In combination, the above-stated reasons overwhelmingly support such reversal. Accordingly, Appellants respectfully request that the Board reverse the rejections of the claims.

Respectfully submitted,

Date: 12/10/07

Attorney: 
James D. Shaurette
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VIII. CLAIMS APPENDIX

1 1. [Previously Presented] A laser scanning apparatus comprising:
2 a light source configured to generate a single light beam;
3 a scanning device optically coupled with the light source and configured
4 to scan the light beam along a photoconductor in a plurality of scan lines; and
5 a start-of-scan detector assembly configured to sample the single light
6 beam and initiate a start-of-scan operation of one of the scan lines of
7 information to be written on the photoconductor, and wherein only the sampled
8 single light beam is used to control a drive level of the light source.

1 2. [Original] The apparatus of claim 1, further comprising:
2 a control system configured to receive a signal from the detector
3 assembly and to control the drive level of the light source based on the signal.

1 3. [Previously Presented] The apparatus of claim 2, wherein the control
2 system comprises processing circuitry configured to compare an indication of
3 the sampled single light beam from the signal with a predetermined value.

1 4. [Original] The apparatus of claim 2, wherein the control system is
2 configured to maintain the drive level of the light source at a predetermined drive
3 level during scanning of the one scan line.

1 5. [Original] The apparatus of claim 1, wherein the light source
2 comprises a vertical cavity surface emitting laser diode (VCSEL).

1 6. [Original] The apparatus of claim 1, wherein the light beam is sampled
2 only once per scan line of information written on the photoconductor, and the
3 light beam is sampled prior to writing the scan line of information on the
4 photoconductor.

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1 7. [Original] The apparatus of claim 1, wherein the scanning device
2 comprises a rotating polygon mirror.

1 8. [Original] The apparatus of claim 1, wherein the start-of-scan detector
2 assembly is disposed outside of a scan area of the photoconductor.

1 9. [Previously Presented] A laser scanning apparatus comprising:
2 a rotating scanning device configured to scan a light beam from a light
3 source;
4 a photodetector optically coupled with the rotating scanning device and
5 configured to sample the light beam from the rotating scanning device;
6 a control system configured to receive an indication of the sampled light
7 beam from the photodetector and to control a drive level of the light source
8 responsive to the indication of the sampled light; and
9 wherein the control system is configured to maintain the light source at a
10 constant drive level during scanning of a single line of information on the
11 photoconductor.

1 10. [Original] The apparatus of claim 9, wherein the light source is
2 configured to emit light in a single direction.

1 11. [Original] The apparatus of claim 9, wherein the light source
2 comprises a vertical cavity surface emission laser diode (VCSEL).

1 12. [Original] The apparatus of claim 9, wherein the control system
2 comprises processing circuitry configured to compare an indication of the
3 sampled light beam with a predetermined drive level value, and to control the
4 drive level of the light source based on the comparison.

1 14. [Previously Presented] A laser scanning apparatus comprising:
2 a laser configured to generate a single light beam;
3 a scanning device configured to scan the light beam from the laser;

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4 a photodetector optically coupled with the scanning device, and
5 configured to sample the light beam only once per line of information scanned
6 onto a photoconductor; and

7 a control system configured to receive an indication of the sampled single
8 light beam from the photodetector and to maintain a drive level of the laser at a
9 constant drive level during scanning of the line of information onto the
10 photoconductor using the indication of the sampled single light beam.

1 15. [Previously Presented] The apparatus of claim 14, wherein the laser
2 is configured to emit a light beam in a single direction.

1 16. [Previously Presented] The apparatus of claim 14, wherein the
2 photodetector is utilized to initiate a start of scan operation of the line of
3 information.

1 17. [Original] The apparatus of claim 14, wherein the sampled light
2 beam is obtained before scanning a line of information onto the photoconductor.

1 18. [Previously Presented] A laser scanning apparatus comprising:
2 means for generating a single light beam;
3 means for scanning the light beam onto a photoconductor;
4 means for sampling the single light beam which causes information to be
5 scanned onto the photoconductor; and
6 means for receiving an indication of the sampled single light beam from
7 the means for sampling and for maintaining the means for generating at a
8 constant drive level using the indication of the sampled single light beam and
9 during scanning of the line of information onto the photoconductor.

1 19. [Previously Presented] The apparatus of claim 18, wherein the
2 means for generating comprises a laser.

1 20. [Original] The apparatus of claim 18, wherein the light beam is
2 sampled before writing a scan line of information onto the photoconductor.

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1 21. [Original] The apparatus of claim 18, wherein the means for sampling
2 is disposed outside of a scan area of the photoconductor.

1 22. [Previously Presented] A laser scanning method comprising:
2 generating a single light beam using a light source;
3 providing a rotating scanning device and a photoconductor;
4 scanning the light beam along the photoconductor using the rotating
5 scanning device;
6 sampling only the single light beam from the rotating scanning device
7 using a sampling assembly; and
8 controlling the light source only using the sampling of only the single light
9 beam.

1 23. [Original] The method of claim 22, further comprising:
2 initiating writing of a scan line of information onto the photoconductor
3 using the sampling assembly.

1 24. [Previously Presented] The method of claim 22, wherein the
2 controlling comprises:
3 receiving the sampled light beam in a control system;
4 comparing an indication of the sampled light beam with a predetermined
5 drive level value; and
6 wherein the controlling comprises controlling a drive level of the light
7 source responsive to the comparison.

1 25. [Original] The method of claim 22, further comprising:
2 maintaining an output power of the light source at a constant level during
3 writing of a single scan line of information onto the photoconductor.

1 26. [Original] The method of claim 22, wherein the light source
2 comprises a vertical cavity surface emitting laser diode (VCSEL).

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1 27. [Original] The method of claim 22, wherein the sampling is
2 performed only once per scan line of information written on the photoconductor
3 and prior to writing the scan line of information on the photoconductor.

1 28. [Original] The method of claim 22, wherein the sampling assembly is
2 located outside of a scan area of the photoconductor.

1 29. [Previously Presented] A hard imaging device comprising:
2 a photoconductor;
3 a laser scanning apparatus configured to write scan lines of information
4 onto the photoconductor, the laser scanning apparatus comprising:
5 a laser configured to generate a single light beam;
6 a scanning device optically coupled with the laser and configured
7 to scan the light beam along the photoconductor to form the scan lines;
8 a sampling assembly configured to sample the light beam and to
9 generate a signal indicative of the sampling of the single light beam;
10 a control system configured to control an intensity of the light
11 beam generated by the laser responsive to the signal indicative of the sampling
12 of the single light beam; and
13 an image engine configured to form hard images from the written scan
14 lines using media.

1 30. [Previously Presented] The device of claim 29, wherein the control
2 system is configured to receive the signal indicative of only the sampling of only
3 the single light beam and to control a drive level of the light source based
4 entirely on the received signal.

1 31. [Previously Presented] An article of manufacture comprising:
2 processor-usable media comprising programming configured to cause
3 processing circuitry to:
4 output a control signal to control a light source configured to
5 generate a single light beam used to scan a plurality of scan lines of information
6 onto a photoconductor;

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7 access an output of a start-of-scan detector assembly which is
8 indicative of only the single light beam, wherein the output indicates appropriate
9 timing for initiation of writing of the information for the respective scan lines;
10 process the output of the start-of-scan detector assembly; and
11 adjust the control signal responsive to the processing of the output
12 to adjust an intensity of the light beam generated by the light source.

1 32. [Original] The article of manufacture of claim 31, wherein the
2 programming is further configured to cause the processing circuitry to adjust the
3 control signal to provide the light beam having a substantially constant intensity
4 during the scanning of the scan lines.

1 33. [Previously Presented] The apparatus of claim 1 wherein the light
2 source comprises a laser configured to generate the light beam.

1 34. [Previously Presented] The apparatus of claim 33 wherein the laser
2 is configured to generate all of the photons which are sampled by the detector
3 assembly.

1 35. [Previously Presented] The apparatus of claim 33 wherein the laser
2 is configured to generate the light beam void of any light received by the laser.

1 36. [Previously Presented] The apparatus of claim 33 further
2 comprising a control system configured to provide a control signal to control the
3 drive level of the laser during the generation of the light beam, and wherein the
4 control system is configured to vary the control signal responsive to the sampled
5 single light beam.

1 37. [Previously Presented] The apparatus of claim 1 wherein the light
2 source is configured to generate an entirety of the light beam for the first time,
3 and wherein the light beam is void of any other light generated by a source
4 different than the light source.

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1 38. [Previously Presented] The apparatus of claim 9 further comprising
2 the light source comprising a laser configured to generate the light beam.

1 40. [Previously Presented] The method of claim 22 wherein the
2 generating comprises generating using the light source comprising a laser, and
3 the controlling comprises controlling the laser.

1 41. [Previously Presented] The method of claim 22 wherein the
2 generating comprises generating all light of the light beam using the light source.

1 42. [Previously Presented] The method of claim 22 wherein the
2 controlling comprises:
3 applying a control signal to control the light source; and
4 varying the control signal responsive to only the sampling of only the
5 single light beam.

1 43. [Previously Presented] The method of claim 42 wherein the
2 varying comprises varying to control the light source to generate the light beam
3 having a substantially constant intensity.

1 44. [Previously Presented] The device of claim 29 wherein the
2 sampling assembly is configured to initiate start-of-scan operations to write the
3 scan lines onto the photoconductor.

1 45. [Previously Presented] The apparatus of claim 9 further comprising
2 the light source, and wherein the light source is configured to only generate the
3 light beam comprising only a single light beam, the photodetector is configured
4 to sample the single light beam and to provide the indication of only the sampled
5 single light beam, and the control system is configured to control the drive level
6 of the light source only using the indication of only the sampled single light
7 beam.

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1 46. [Previously Presented] The apparatus of claim 14 wherein the
2 photodetector is configured to provide the indication of only the sampled single
3 light beam, and the control system is configured to maintain the drive level of
4 the laser at the constant drive level only using the indication of only the sampled
5 single light beam.

1 47. [Previously Presented] The method of claim 18 wherein the means
2 for sampling comprises means for providing the indication of only the sampled
3 single light beam and the means for maintaining comprises means for
4 maintaining the means for generating at the constant drive level only using the
5 indication of only the sampled single light beam.

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IX. EVIDENCE APPENDIX

Appellants submit no evidence with this appellate brief.

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X. RELATED PROCEEDINGS APPENDIX

Appellants are not aware of any related proceedings.

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